STANDARDS BULLETIN

January 2025

This Standards Bulletin from the Organization of Scientific Area Committees (OSAC) for Forensic Science provides a monthly update on forensic science standards moving through the OSAC Registry and standards development process, along with other OSAC news and standards-related information.

STANDARDS UPDATES

OSAC Registry Updates

The following **nine** standards have been added to the OSAC Registry effective January 13, 2025.

SDO Published

ASB

- ANSI/ASB Standard 180, *Standard for the Use of GenBank for Taxonomic Assignment of Wildlife.* 2024. 1st. Ed.
    - **Note:** This will replace OSAC 2021-S-0006, *Standard for the Selection and Evaluation of GenBank® Results for Taxonomic Assignment of Wildlife,* on the OSAC Registry.

SWGDE

- 17-F-001-2.0 SWGDE, *Recommendations for Cell Site Analysis*. (2023-12-18).
- 17-F-002-2.0 SWGDE, *Best Practices for Computer Forensic Acquisitions* (2023-06-15).

OSAC Proposed

- OSAC 2022-S-0032, *Best Practice Recommendation for the Chemical Processing of Footwear and Tire Impression Evidence.*

- OSAC 2022-S-0037, *Standard for DNA-based Taxonomic Identification in Forensic Entomology.*
- OSAC 2023-N-0012, *Best Practice Recommendations for the Development of Criteria for Acceptance of a Request for Friction Ridge Examinations.*
- OSAC 2023-S-0028, *Best Practice Recommendations for the Resolution of Conflicts in Toolmark Value Determinations and Source Conclusions.*
- OSAC 2024-S-0002, *Standard Test Method for the Examination and Comparison of Toolmarks for Source Attribution.*
- OSAC 2024-S-0012, *Standard Practice for the Forensic Analysis of Geological Materials by Scanning Electron Microscopy and Energy Dispersive X-Ray Spectrometry.*

Visit the OSAC Registry webpage to view these new standards!

The OSAC Registry now contains 225 standards (152 published and 73 OSAC Proposed) representing over 20 forensic science disciplines.

Registry Extensions

The following standards have been approved for a 3-year extension on the OSAC Registry:

- ASB Technical Report 025, *Crime Scene/Death Investigation - Dogs and Sensors - Terms and Definitions*
- ANSI/ADA 1058-2010D, *Forensic Dental Data Set*
- ADA 1088-2017D, *Human Identification by Comparative Dental Analysis*
- ISO/IEC 17025:2017, *General Requirements for the Competence of Testing and Calibration Laboratories*
- ISO 21043-2 Forensic Sciences - Part 2: *Recognition, Recording, Collecting Transport and Storage of Items*

Standards Open for Comment

SDO Published Standards Under Consideration for the OSAC Registry

The OSAC Registry approval process for published standards is used to review existing SDO-published standards for technical quality and placement on the Registry.

- There are no SDO-published standards under consideration for the OSAC Registry at this time.

OSAC Proposed Standards Under Consideration for the OSAC Registry

The OSAC Registry approval process for OSAC Proposed Standards is used to review OSAC drafted standards for technical quality and placement on the Registry. The following draft OSAC Proposed Standards are being considered for submission to an SDO. The final draft provided to the SDO will be available on the OSAC Registry as an "OSAC Proposed Standard."

OSAC welcomes comments on whether the following drafts are suitable for release to the SDO and suggestions for improvements in content and wording. **To be considered, comments must be placed in the OSAC Comment Form and sent to comments@nist.gov by 11:59 p.m. ET on February 3, 2025.**

- OSAC 2025-S-0010, *Standard Practice for Reporting Results of the Analysis of Seized Drugs*.
- OSAC 2025-S-0011, *Standard Practice for Polarized Light Microscopy in the Forensic Examination and Comparison of Soils*.
- OSAC 2025-S-0016, *Standard for the Identification and Quantification of Volatile Compounds in Biological Fluids*.
- OSAC 2025-N-0017, *Standard Terminology Relating to Trace Materials Analysis*.

Standards Open for Comment at Standards Development Organizations (SDOs)

There are **18** forensic science standards currently open for public comment at the following SDOs:

ASB:

- One in firearm & toolmarks with a comment deadline of **January 16, 2025**.
- One in bloodstain pattern analysis with a comment deadline of **January 20, 2025**.
- One in forensic toxicology and one in friction ridge with a comment deadline of **January 27, 2025**
- Two in medicolegal death investigation with comment deadlines of **February 10,** and **February 17, 2025**.

ASTM International:

- Two in trace materials with a comment deadline of **January 20, 2025**.

SWGDE

- Ten documents with a comment deadline of **January 27, 2025**.

Visit OSAC's Standards Open for Comment webpage to access these documents and for instructions on how to submit your comments.

SDO Updates

New Published Standards

From ASB:

- ANSI/ASB Best Practice Recommendation 007, *Postmortem Impression Submission Strategy for Comprehensive Searches of Essential Automated Fingerprint Identification System (AFIS) Databases*. 2024. 2nd. Ed. (Revision of 2018 version).
- ANSI/ASB Standard 056, *Standard for Evaluation of Measurement Uncertainty in Forensic Toxicology* (new standard). 2025. 1st. Ed.

Visit ASB's Published Documents webpage to view this standard.

From SWGDE:

- 12-F-004-3.2 SWGDE, *Best Practices for Vehicle Infotainment and Telematics Systems*. (2024-12-03).
- 12-F-006-2.0 SWGDE, *Core Competencies for Digital Forensics.* (2024-12-06).
- 17-V-002-1.3 SWGDE, *Best Practices for Data Acquisition from Digital Video Recorders*. (2024-12-03).
- 21-V-002-1.2 SWGDE, *Considerations for Release of Synopsis Videos for Public Review.* (2024-12-02).
- 23-F-003-1.0 SWGDE, *Best Practices for Internet of Things Seizure and Analysis.* (2024-12-06).
- 23-F-004-1.0 SWGDE, *Best Practices for Digital Evidence Acquisition, Preservation, and Analysis from Cloud Service Providers.* (2024-12-09).
- 23-V-001-1.2 SWGDE, *Best Practices for Digital Video Authentication*. (2024-03-07).

Visit SWGDE's Published Documents webpage to view these standards.

Work Proposals for New or Revised Standards

On December 27, 2024, a Project Initiation Notification System (PINS) was published on pages 2-3 of the *ANSI Standards Action*. This will begin ASB's work on the following standards:

- BSR/ASB Standard 218-202x, *Standard for the Collection and Preservation of Entomological Evidence from a Terrestrial Environment*. This document provides standardization on how to document and collect entomological evidence in a manner that maximizes the utility of this evidence when it reaches a qualified forensic entomologist for examination.
    - **NOTE:** This is OSAC 2022-N-0039, *Standard for the Collection and Preservation of Entomological Evidence from a Terrestrial Environment*, currently on the OSAC Registry.

- BSR/ASB Standard 220-202x, *Standard for Scene Documentation* (new standard). Scene documentation is an essential component of scene investigation and reconstruction, and its quality and completeness are critical to ensuring a complete scene recording. This document standardizes the requirements for scene documentation that will hold across all scene types.
    - **NOTE:** This is OSAC 2023-N-0002, *Standard for Scene Documentation*, currently on the OSAC Registry.

On January 3, 2025, a Project Initiation Notification System (PINS) was published on page 2 of the *ANSI Standards Action*. This will begin ASB's work on the following standard:

- BSR/ASB Standard 088-202x, *Standard for Training, Certification, and Documentation of Canine Detection Disciplines*. This is the revision to the published ANSI/ASB Standard 088. This revision will update the document to be in alignment with other, more recently published standards in the discipline. The document will also include a new annex on orthogonal detectors. The updated document will continue to contain requirements for canine teams (canine handlers and canines) and training, certification, and documentation processes specifically dedicated to general guidelines for detector canine teams. This standard contains requirements for the development of training of canine handlers and canines and will also detail the canine team assessments and the basis for certification procedures including record keeping and document management. This standard does not cover discipline-specific guidelines.

On January 10, 2025, a Project Initiation Notification System (PINS) was published on pages 2-3 of the *ANSI Standards Action*. This will begin ASTM's work on the following standards:

- BSR/ASTM WK93265-202x, *New Guide for the Forensic Analysis of Geological Materials by Scanning Electron Microscopy and Energy Dispersive X-Ray Spectrometry* (new standard). Currently, no standards specifically address forensic applications of SEM analysis of geological material. Analysts within forensic laboratories can use this information to create and validate SEM-EDX practices and methods for analyzing and comparing samples of geological material.
    - **Note:** This is OSAC 2024-S-0012, *Standard Practice for the Forensic Analysis of Geological Materials by Scanning Electron Microscopy and Energy Dispersive X-Ray Spectrometry*, currently on the OSAC Registry.
- BSR/ASTM WK93266-202x, *New Guide for Capturing Iris Images for Use with Iris Recognition Systems* (new standard). NGI Iris Service is now operational. Many new collection sites are being stood up. These sites need guidance on proper collection of iris images to assure interoperability.
    - **Note:** This is OSAC 2024-N-0004, *Standard Guide for Capturing Iris Images for Use with Iris Recognition Systems*, currently on the OSAC Registry.

IMPLEMENTATION IMPACTS & RESOURCES

OSAC Registry Implementation

Pexels.com

2024 was a very successful year for the OSAC Registry Implementation Survey. We finished the year with a total of 224 Forensic Science Service Providers (FSSPs) having contributed to the survey since the OSAC Program Office (OPO) started collecting implementation data in 2021. This represents an increase of 72 new contributions over the past calendar year with a majority of these entries coming in the last six months.

One of the biggest highlights for this process was the launch of the new online survey that has made it far simpler for FSSPs to enter, monitor, and update their standards implementation progress. This system has also made it simpler for OPO to collate and evaluate standards implementation data to gain greater insights regarding how the standards are being used, measure the impact of individual standards, and better determine how improvements can be made in the standards development process.

For those interested, an overview of the data collected through this survey will be presented on Thursday, February 20th during the Criminalistics session of the American Academy of Forensic Sciences annual meeting in Baltimore, Maryland.

If you haven't yet contributed to the survey, please consider joining the momentum and completing a survey for your organization. More information and additional links to resources and the survey itself can be found here.

If you have any questions or need more clarification about an OSAC Proposed Standard, please contact forensics@nist.gov.

OSAC UPDATES

Facial & Iris Identification Subcommittee Research Needs Symposium

Mark your calendars! The Facial & Iris Identification Subcommittee is hosting a virtual Research Needs Symposium on **February 27th**! Join Virtually HERE

New Human Factors Article Published by OSAC Registry Implementer and Human Factor Task Group Co-Vice Chair!

jd8/Vecteezy

Check out this article, *A Practical Approach to Mitigating Cognitive Bias Effects in Forensic Casework*, published by Carolina Rojas et al., with the Department of Forensic Sciences in Costa Rica, and OSAC's Human Factors Task Group Co-Vice Chair, **Adele Quigley-McBride**.

After reviewing the published *LSU-E/Information Management Worksheet* in 2022, the Department of Forensic Sciences in Costa Rica, an OSAC Registry Implementer, began a pilot test on the worksheet and other bias mitigation strategies within their Questioned Documents Unit. OSAC's Human Factors Task Group Co-Vice Chair, Adele Quigley-McBride, a renowned expert in the field, provided invaluable assistance during their journey to implement

the bias mitigation pilot program.

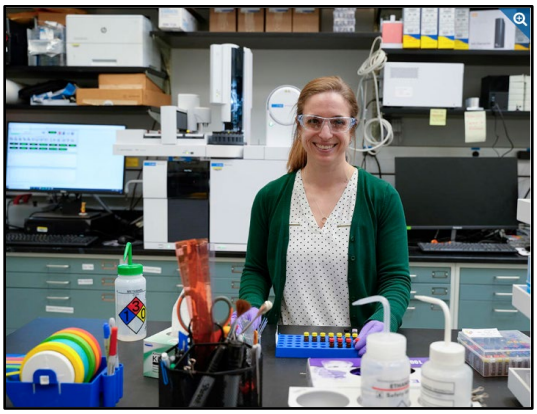
Together, they were able to write and publish a paper that not only detailed the steps taken to balance recommendations, but also emphasized their practicality. The recommendations were carefully chosen to be both important in reducing the risk of bias and feasible with the resources available. The paper was designed to be easily understood, even for those with no human factors experience/training. It primarily focuses on the practical aspects of implementing the changes that human factors representatives at OSAC often suggest, as demonstrated by the cost-benefit analysis conducted by the Department of Forensic Sciences in Costa Rica laboratory.

UPCOMING OSAC & OTHER FORENSIC SCIENCE EVENTS

- January 13-16, 2025: Scientific Working Group on Digital Evidence (SWGDE) | San Jose, CA
- February 17-25, 2025: American Academy of Forensic Sciences (AAFS) Annual Conference | Baltimore, MD
    - Check out these **NIST, OSAC and other standards-related presentations** happening at the AAFS Conference!
- March 1-5, 2025: Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (PITTCON) | Boston, MA
- March 25-27: OSAC All-Hands Meeting: Chemistry: Trace Evidence SAC, Digital/Multimedia SAC, Medicine SAC, Physics/Pattern Interpretation SAC, and Firearms & Toolmarks SC | St. Louis, MO
- April 4-8, 2025: The American Society of Criminal Laboratory Directors (ASCLD) 52nd Annual Symposium | Denver, CO
- May 6-8: OSAC All-Hands Meeting: Biology/DNA SAC, Chemistry: Seized Drugs/Toxicology SAC, Scene Examination SAC, Physics/Pattern Interpretation SAC | St. Louis, MO
- May 13-16, 2025: Annual Conference of the International Veterinary Forensic Sciences Association (IVFSA) | Clearwater, FL

OTHER FORENSIC SCIENCE NEWS & TRAINING

NIST Forensic Science Resources for Crime Laboratories



Briana Capistran, NIST Researcher

NIST Researcher, **Briana Capistran**, published, *Speeding Up the Wheels of Justice: How NIST Resources Can Help Crime Labs Work Faster*, an informative and comprehensive instruction guide for forensic labs to check or validate their instruments using a free resource for forensic analysts. This practical guide includes the **Rapid GC-MS Validation Template**, a tool that will surely boost your confidence in your work! Click here to learn more!

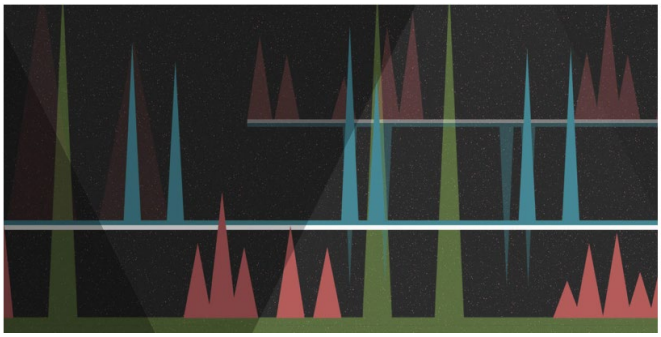
NSC-ADID Recommends Forensic Toxicology Service Providers Adopt Consensus-Based Standards

JOURNAL OF FORENSIC SCIENCES

The Alcohol, Drugs and Impairment Division (ADID) of the National Safety Council (NSC) consists of 100 toxicology professionals who assist with developing tools, such as position statements, and assists the NSC with policy to reduce death and injury from alcohol, drugs, and impairment. Recently, the NSC-ADID released a public statement recommending forensic toxicology service providers to adopt consensus-based standards, to include standards on the OSAC Registry.

Read the Letter to the Editor to learn more!

NIST Publishes Report on DNA Mixture Interpretation Methods Review



N. Hanacek/NIST

The National Institute of Standards and Technology (NIST) has published *DNA Mixture Interpretation: A Scientific Foundation Review*. This report reviews the methods that forensic laboratories use to interpret evidence containing a mixture of DNA from two or more people.

NIST published a draft version of this report in June 2021 and invited public comment at that time. Sixty-three sets of comments spanning almost 450 pages were received and are available on the NIST website. The study authors considered all comments when preparing the final version of this report.

The new version considers several studies published since the draft report was released and includes updated data from DNA analyst proficiency tests and other sources. The preface of the report contains a list of significant revisions.

Read more about the report and background information.

NIST's Rapid Drug Analysis and Research Newsletter

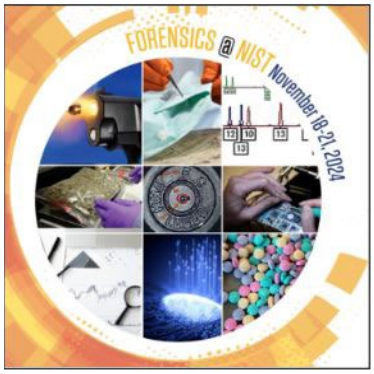
NIST's Rapid Drug Analysis and Research (RaDAR) lab provides near real-time insight into the nation's illicit drug landscape. By analyzing drug samples sent from local, state and federal partners, the lab identifies new compounds appearing in the illegal drug supply that may pose a health and safety threat to users, public health workers and law enforcement.

Radar

Check out the latest RaDar newsletter where NIST researchers report on their latest findings, including the continued presence of the industrial chemical BTMPS in fentanyl samples. There's also a breakdown for the East and West coasts of the top compounds detected within samples for November.

Subscribe to the newsletter to keep up with the latest results, analysis and publications.

Forensics@NIST Event: In Case You Missed It!



Thank you to all who attended the Forensics@NIST 2024 event, held virtually from November 18 to November 21, 2024. 1672 people from 72 countries registered to attend, with 1072 actual attendees present for the meeting and workshops to learn about advanced methods in metrology, computer science, and statistics to strengthen forensic science.

In case you missed it or would like a refresher, the presentation recordings are now available on the Forensics@NIST event page.

National Institute of Justice (NIJ) Forensic Intelligence Framework

NIJ | NATIONAL INSTITUTE OF JUSTICE
ADVANCING JUSTICE THROUGH SCIENCE

National Institute of Justice

Forensic data often remains archived in state and local labs, only available for reference in the solution and prosecution of local crimes. By making these data more widely available for a more global forensic intelligence approach, agencies can use datasets to link and track crime patterns in a more collaborative manner to help to solve, disrupt, and prevent interjurisdictional crime.

The National Institute of Justice recently released a framework that provides guidance for state and local law enforcement agencies and their forensic laboratories on developing or enhancing a forensic intelligence program.

Benefits of this forensic intelligence approach includes:

- Early identification and elimination of suspects and recognition of criminal tactics, techniques, and procedures.
- Increased public safety through the detection, disruption, prevention, and deterrence of serial and organized crime.
- Improved policing and security actions through enhanced threat and risk assessment and identification of emerging issues of concern to the community.

The Forensic Intelligence Framework PDF is free and accessible to all.

Six New National Institute of Justice (NIJ) Bloodstain Pattern Analysis Articles

Freepik.com

Bloodstain pattern analysis is a forensic science discipline that reconstructs a blood-shedding event by examining and interpreting the attributes of bloodstains. It can provide crucial evidence in some legal cases, aiding in crime scene reconstruction and supporting or contradicting witness testimony.

The 2009 National Research Council report, *Strengthening Forensic Science in the United States: A Path Forward, questioned the validity of bloodstain pattern analysis,* specifically stating that "the uncertainties associated with bloodstain pattern analysis are enormous" and "the opinions of bloodstain pattern analysts are more subjective than scientific." This conclusion was repeated in a 2016 report from the President's Council of Advisors on Science and Technology.

Since then, the National Institute of Justice (NIJ) has funded error rate studies of practicing bloodstain pattern analysts. The results allow practitioners in the justice system to consider the value and the limits of analysts' testimony. NIJ also supports a research portfolio that applies experimental and computational fluid dynamics to better understand the physical processes involved in bloodstain pattern formation.

Check out the bloodstain pattern analysis reading and resources below:

- Study Assesses the Accuracy and Reproducibility of Bloodstain Pattern Analysis | Article
- Study Reports Error Rates for Bloodstain Pattern Analysis | Article
- Researchers Develop Insight Into Blood Droplet Behavior for Bloodstain Pattern Analysis | Article
- Error and Uncertainty in Bloodstain Pattern Analysis | Recorded Webinar
- Lessons Learned from Proficiency Test Results in Bloodstain Pattern Analysis | Recorded Webinar
- Communicating Conclusions in Bloodstain Pattern Analysis | Recorded Webinar

AAFS Checklists and Factsheets

As part of a cooperative agreement with NIST, the American Academy of Forensic Sciences (AAFS) is developing training, tools, and resources to enhance implementation efforts and broaden awareness of forensic science standards among communities of interest.

- Standards factsheets provide a concise summary of a standard and facilitate a broader understanding of its purpose, why it is needed, and the benefits of adoption. These

factsheets summarize the contents of standards on the OSAC Registry. **They are not intended to provide an interpretation for any portion of a standard.** Standards factsheets are available for 135+ standards on the OSAC Registry.

- Standards checklists provide a tool for a forensic science service provider to evaluate the level of implementation and/or audit conformance to a standard. A checklist is a supplementary tool and should not be used independently - it must be used in conjunction with the standard. Copies of standards are available through the SDO. Each checklist is specific to a version of a standard and not all sections of a standard may be included in a checklist. **Checklists are not intended to provide an interpretation for any portion of a standard.** Checklists are available for 130+ standards on the OSAC Registry.
- AAFS Connect offers free standard videos and webinars. Learn about the standards development process, standards development activities in various disciplines, and information about specific SDO published standards on the OSAC Registry.

CONNECT WITH OSAC

Follow us on Social Media. To stay up to date on the latest OSAC news, be sure to follow us on LinkedIn (#ForensicOSAC).

Contact Us. If you have feedback, or questions, or want to learn more about how you can help strengthen forensic science through standards, contact us at forensics@nist.gov.